

Chapter 19

Use with Section 2

ENRICHMENT

● Genetics Since Mendel

Comparing Genotypes and Phenotypes

There are two alleles for red coat color in cattle and horses. Yet, there are three phenotypes: red, white, and roan (a combination of red and white hairs).

- How is it possible for two alleles to produce three phenotypes? _____
- Since both alleles are dominant, a capital letter is used for both alleles. C^R represents the red allele and C^W represents the white allele. What is the genotype of each of the following phenotypes?
 - White color: _____
 - Red color: _____
 - Roan color: _____
- How many genotypes produce the three phenotypes? _____
- Make a Punnett square showing the possible offspring of red and white cattle.

- What is the genotype of all of the offspring? _____
 - What is their phenotype? _____
- Make a Punnett square showing the possible offspring of roan cattle.

- What is the ratio of red offspring to roan offspring to white offspring (red:roan:white)?

- Write a fraction to represent each of the following.

Number of red offspring out of the total: _____

Number of roan offspring out of the total: _____

Number of white offspring out of the total: _____